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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	Simon Robert Smith Richard Paul Whittington	)
Applicant:	09/506,189	)
Filing Date:	February 17, 2000	)
For:	Method For Constructing A Process- Driven Information System	)
Art Unit:	Unknown	)

TRANSMITTAL OF PRIORITY DOCUMENT

Assistant Commissioner for Patents
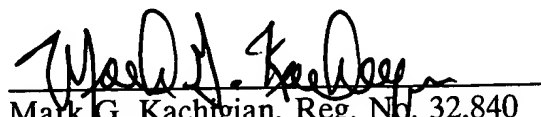Washington, D.C. 20231

Dear Sir:

Enclosed herewith is a certified copy of British Patent Application No. 9903830.9 for which the above-identified patent application claims priority from.

If, for any reason, this priority document is not acceptable, please inform the undersigned as soon as possible.

Respectfully Submitted

HEAD, JOHNSON & KACHIGIAN

Date: April 3, 2000

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Attorney for Applicant

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.
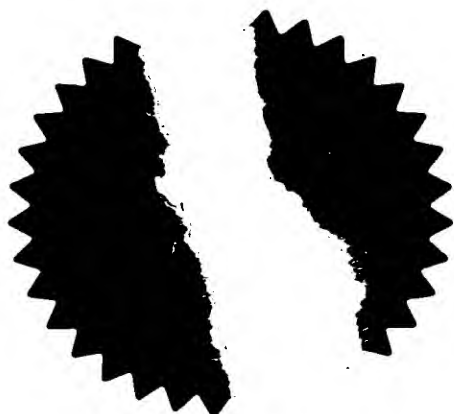
I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears a correction, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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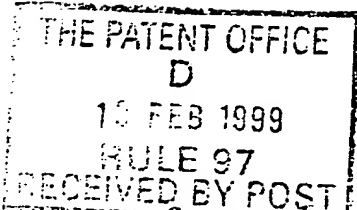
Signed

Dated   07 March 2000

An Executive Agency of the Department of Trade and Industry

Patents Form 1/77

The
Patent
Office

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F01/7700 0.00 - 9903830.9

Request for grant of a patent

1	Your reference	MRH/P15585
2	Patent application number	'19 FEB 1999 **9903830.9**
3	Full name, address and postcode of the applicant	~~Salamander Limited~~ The Salamander Organisation Limited The Innovation Centre University Road York YO10 5DG ~~11/13 17/6/13~~
	Patents ADP number	
	State of incorporation	UK 766651000|
4	Title of the invention	PROCESS-SYSTEMS INTEGRATION METHOD
5	Name of agent Address for service	Harrison Goddard Foote ~~Belmont House~~ ~~20 Wood Lane~~ ~~Headingley~~ ~~Leeds~~ ~~LS6 2AE~~ Bailey Walsh + Co. 5 York Place Leeds LS1 2SD
	Patents ADP number	~~1457160~~1 224001
6	Priority applications Country Priority App No Date of Filing	

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7	Parent application (eg Divisional)	Earlier Application No	Date of Filing
8	Statement of Inventorship Needed?		
9	Number of sheets for any of the following (not counting copies of same document) Continuation sheets of this form		
	Description	6	
	Claims		
	Abstract		
	Drawings	3 4 4 4	
10	Number of other documents attached Priority documents		
	Translations of priority documents		
	P7/77		
	P9/77		
	P10/77		
	Other documents		
11	I/We request the grant of a patent on the basis of this application. Signature ___*Hann Gother Rock*___ Date		
12	Name and daytime telephone number of person to contact in the United Kingdom +44 113 2258350		

PROCESS-SYSTEMS INTEGRATION METHOD

THE FIELD OF THE INVENTION

P-SIM is a method with associated software tools for creating process-based information systems. The method allows the rapid creation by non-technical users of process models describing the working of an organisation, said models being used to direct the operation of a collection of software components. The present invention implements the concept of user-driven information system development by utilising open standards in process modelling and software component development based on web browser technologies.

Systems developed by the P-SIM method integrate characteristics of process modelling software, typified by its ability to communicate and disseminate business intent, with the task support characteristics of workflow software, typified by its ability to provide coordination and awareness support for those carrying out their work within the organisation. The underlying concept of P-SIM is to harmonise the enactment of business processes with the delivery of associated computer support by linking graphical maps of business processes to computer support, presenting a consistent operating interface for all organisation workers.

BACKGROUND TO THE INVENTION

Business value accrues from effective enactment of processes that deliver against the intent of the business. For example, if business intent is to increase delivery onto the market of new and innovative products, and this intent is well-founded, then value will be derived from the implementation of an effective product delivery process.

To be effectively enacted, a process must have:
1. A well-focused purpose,
2. An unambiguous design that is understood by those responsible for its enactment,
3. Defined and agreed linkages with related processes, and

4. Motivated and competent people, complemented by computer systems functionality.

This poses two specific but inter-linked requirements:

1. A need for understanding of business processes by those responsible for enacting them: people need to appreciate why the process exists, what it does, and the context of their contribution.
2. A need to connect the tasks performed by people with the supporting computer systems functionality, such that work can be planned, co-ordinated and executed efficiently and accurately.

As an example of the first requirement, a product delivery process is likely to require co-ordination between technical, financial, logistical and marketing responsibilities; and an individual financial analyst needs to be able to identify the tasks currently required of them, and to appreciate the context of their analysis, including the likely consequences of their judgements or recommendations.

As an example of the second requirement, said product delivery process is likely to require computer support which is integrated with the various coordinated responsibilities, and available to the financial analyst within the context of these responsibilities.

Inventions in the field of process modelling have attempted to address the first of these requirements e.g. by providing graphical representations of processes [US5819230], or mapping processes to workflow structures [US05630069], and this work is cited here as an influence. These inventions provide a visualisation of business processes in the context of business intent and direction, but without providing for the enactment of processes i.e. the manipulation of resources by workers.

Inventions in the field of process enactment and workflow have attempted to address the second of these requirements, through:

1. general purpose methods for developing workflow systems to support ordered activities carried out by a collection of users [US05799297, US05216592, US05301320, US0574661]
2. systems to address the task needs of users independently of their co-workers [US0553861]

These inventions provide support for the manipulation of business resources by workers, but typically lack visualisation, contextual positioning and awareness for workers within the processes of a business.

Inventions which have previously brought these two areas, of business process modelling and understanding, and resource manipulation, together have done so with workflow systems to address specialist functional requirements [US05745901] or using specific models of tasks and actions [US05734837], so concentrating only on processes which are to have an enactment through computer support. The call centre is a typical embodiment of such a concept. Products which attempt a more general linking of these two areas have used proprietary technologies to do so.

The aim of P-SIM is to provide a general, open method for integrating these two areas, allowing the development of systems which provide:

1. the visualisation of business processes
2. the visualisation of the resources generated by, progressed through and delivered from these processes
3. computer support for workers with responsibility for a selection of these processes

The following statements of invention assert how P-SIM achieves this aim.

STATEMENTS OF INVENTION

We claim:

1. A method and associated software tools for creating an integrated process-based information system, said method comprising the following steps:
- the creation of process models, said models being available in a browser-compatible format
- the creation of software components, access to said components being available in a browser-compatible format
- the generation of an information system comprising said process models acting as the user interface to said software components

2. The method defined by claim 1 wherein said generating means comprises the automated linking of said process models to said software components via common URL addressing

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DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

A preferred embodiment of the method is as follows:

1. A team of domain experts creates a set of process models representing the business using a tool capable of generating browser-compatible outputs, also noting the software behaviour (e.g. information access and information recording) required to support each process.

2. A team of software developers creates a set of browser-compatible software components based on the requirements on software behaviour determined in Step One.

3. Links are made between processes and software components automatically based upon the URL addressing i.e. the URL resource for a process will re-direct a browser, if so desired by the user, to the software component corresponding to that process.

4. The resulting P-SIM system is published to the user community.

5. The above four steps are periodically repeated in a review cycle in which the process models and software components of the P-SIM system are revised and re-published.

Said preferred embodiment of P-SIM is illustrated in **Figure 1**.

An example which illustrates the first four steps of said preferred embodiment is as follows:

1. A team of healthcare experts defines a set of care pathways along with a model of patient care in the business modelling tool MooD; these models are published in HTML format using the tool MooD Web Publisher, which uses the unique identifier of each process as the basis for said process's URL. An example is a care pathway for the treatment of Venous Leg Ulcers, as depicted in **Figure 2**.

2. A team of software developers develops a set of Microsoft Active X User Documents to implement the behaviour required by the processes developed in Step One. As a minimum for developing the overall system, a User Document is developed for each process requiring software behaviour, said User Document's URL being similarly named to said process. Said User Document may provide access to a wide range of software resources, such as forms and databases. **Figure 3** depicts an example of a 'Patients' list which can be used to list all patients recorded in a particular database who are currently undergoing care within a particular care pathway.

3. A software tool, HTMLMap, is run, which replaces the content of each process URL for which there exists a User Document with a redirection to that document. For example, a care pathway process model may be represented in a page with the URL P0000376.htm. HTMLMap takes a copy of this page, calling it MooDP0000376.htm, and replaces the contents of P0000376.htm with a redirection to the Active X component P0000376.vbd. The effect gained is the redirection of the user from a process model to appropriate software functionality. Maintaining the original page as well as the software component allows the user to browse process models as normal if required.

4. The system is published in the form of a web-site, with web pages for process models interleaved with active pages providing access to appropriate software behaviour. **Figure 4** gives an illustration of the care pathway process model running in a browser, with the user clicking on the care pathway to bring up a list of patients.
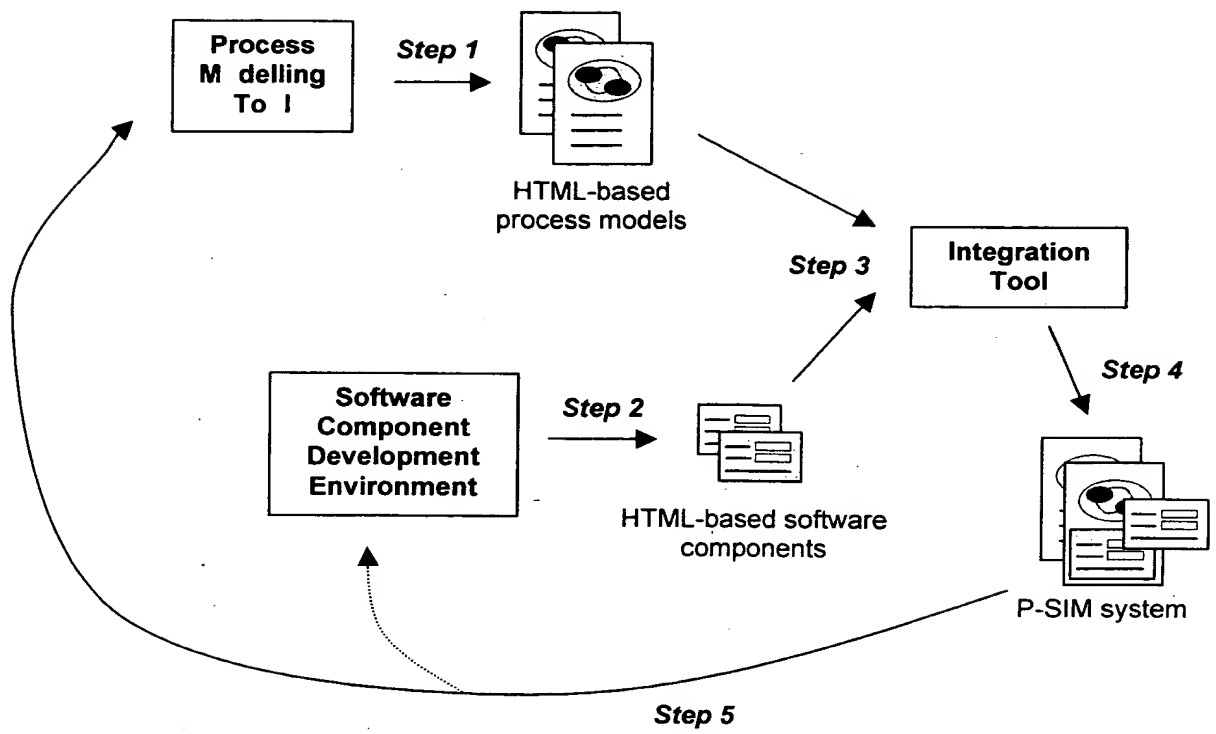
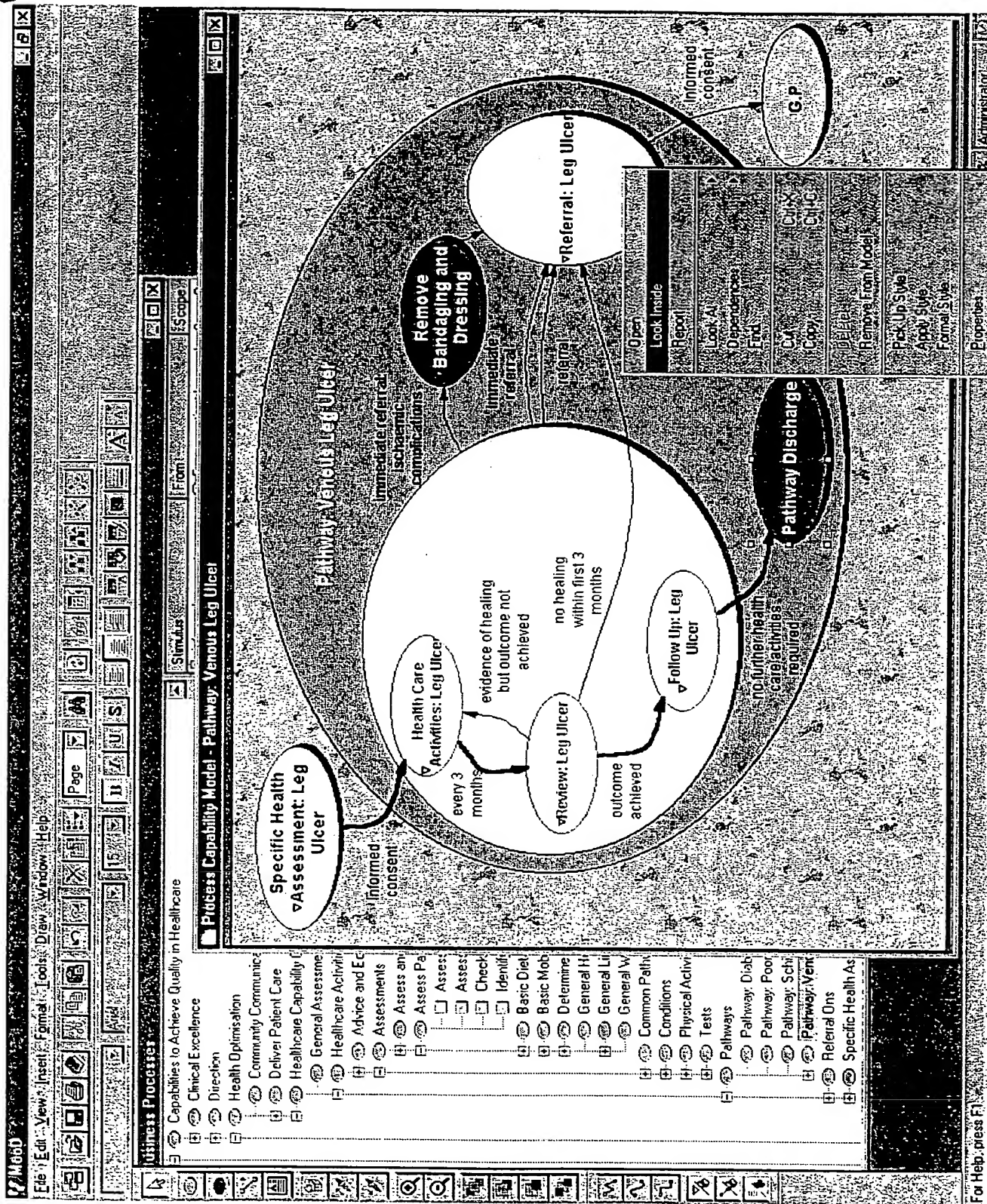**Figure 1.** *Preferred Embodiment of P-SIM*

Figure 2. *Care Pathway for Venous Leg Ulcers developed in MooD Developer*

Patients

Surname	Forenames	NHS Number	Date of Birth	Gender	Language	GP Name	Primary Care
Andrews	Jacob	400 876 7485	26/05/54	M	English	Dr. Elliot	South Charn
Edwards	Isabel	tmp Lei 4982	14/02/78	F	Spanish		
Fearing	Elizabeth Mary	tmp Lei 8403	23/08/56	F	English		
Lakoff	Steven	tmp Lei 9403	18/04/62	M	English		
McPherson	Effie	tmp Lei 6565	03/07/31	F	English		
McPherson	George Andrew	tmp Lei 3895	14/06/45	M	English		
McPherson	Alexander John	tmp Lei 4489	06/12/54	M	English		
McPherson	Bella	tmp Lei 4998	14/07/44	F	English		
Mullins	Daisy Jean	500 492 8948	11/12/34	F	English	Dr. Ainsley	South Charn
Sawyer	Margaret Anne	tmp Lei 4580	25/10/30	F	English		
Simpson	Jeremy Arthur	tmp Lei 0398	30/11/48	M	English		

Surname:
Forenames:
Date of Birth:
Address:
Gender:
Language:

Health Care Details
GP Name:
GP Practice:
NHS No.:
Care Co-ordinator:

Search

Figure 3. *Microsoft Active X User Document implementing a 'Patients' list*

Figure 4. *The link from process model to software component as it appears to users*

TRADEMARKS

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